

L. V. RAULET.
IGNITER.
APPLICATION FILED JUNE 3, 1912.

1,052,089.

Patented Feb. 4, 1913.

2 SHEETS—SHEET 1.

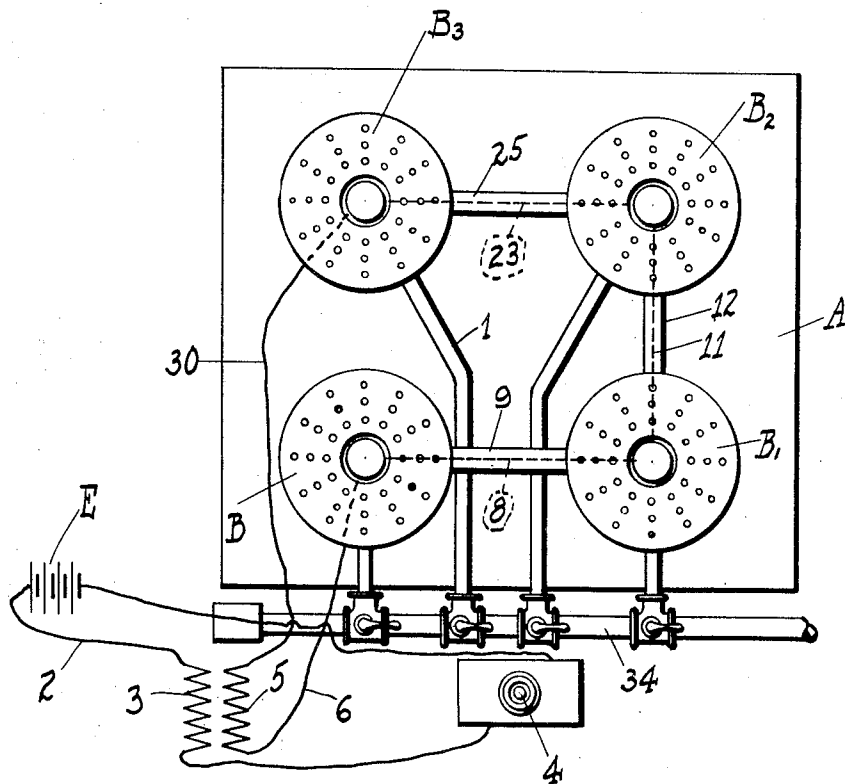


Fig. 1

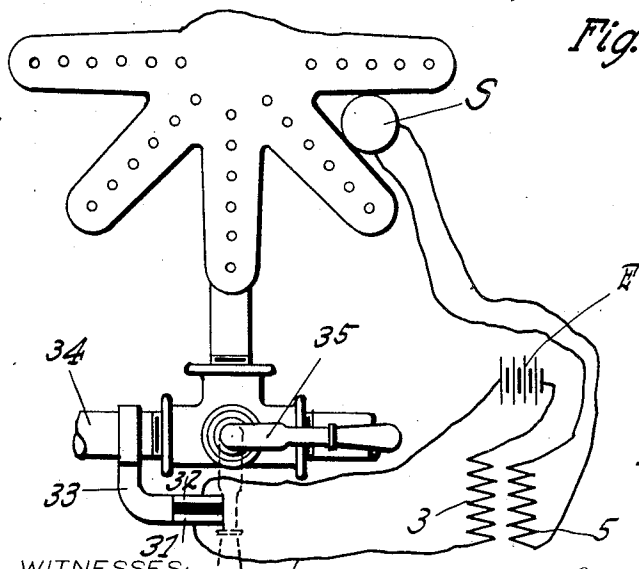


Fig. 4

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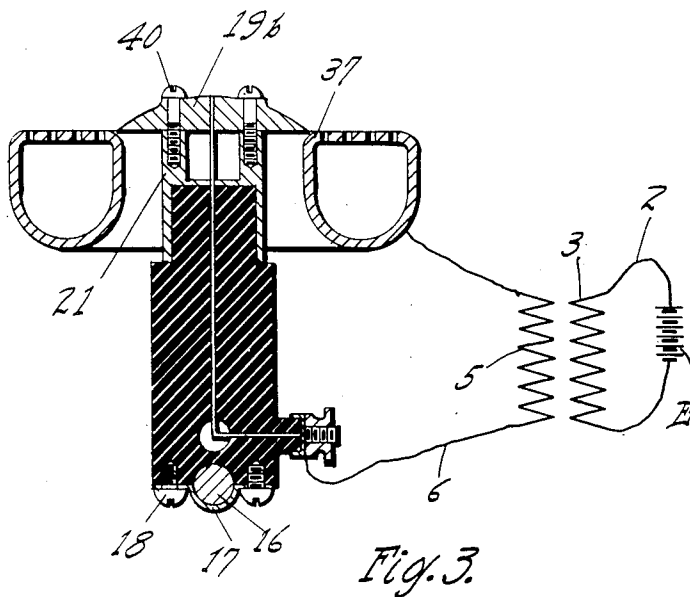
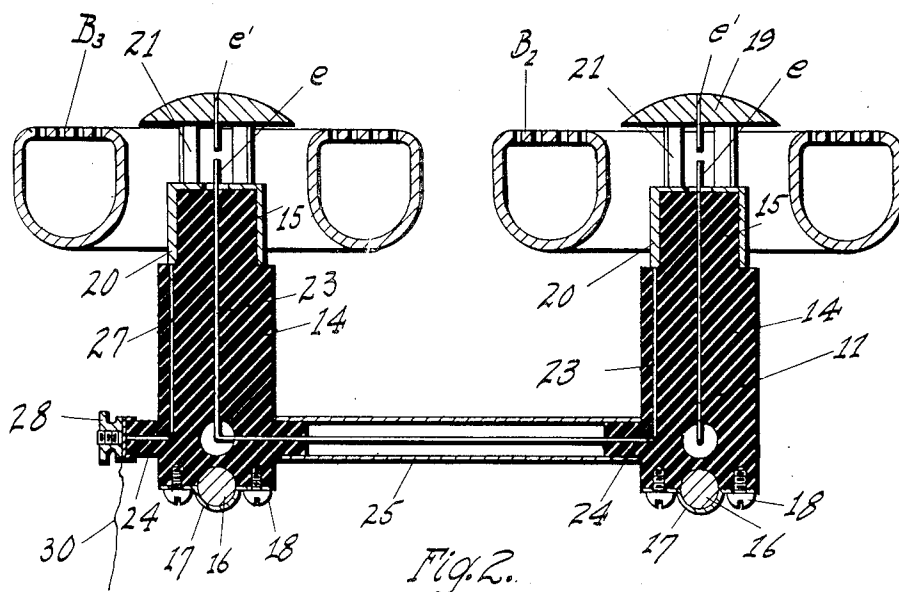
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WITNESSES:

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UNITED STATES PATENT OFFICE.

LOUIS V. RAULET, OF DETROIT, MICHIGAN.

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1,052,089.

Specification of Letters Patent.

Patented Feb. 4, 1913.

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To all whom it may concern:

Be it known that I, LOUIS V. RAULET, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Igniters, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to igniters for gas stoves and hydrocarbon-vapor stoves.

It has for its object a novel form of igniter that utilizes the spark produced by an electric current arcing through an air gap in its circuit.

A novel form of spark plug especially adapted for the conditions of usage in a stove and for removal of parts to clean and repair is employed.

The switching device may be a separate instrument, but I have devised a switch that is automatically operated by the valve that controls the flow of gas or hydrocarbon-vapor.

In the drawings:—Figure 1, is a plan view of my igniter system. Fig. 2, is an enlarged vertical section of two of the burners and the electrical connections. Fig. 3, is a vertical section of a modified form of spark plug. Fig. 4, is a plan view of my invention employed with a form of burner that has no central aperture. This figure also shows the switch that is automatically operated by turning the valve that controls the gas or hydro-carbon-vapor.

A, indicates the stove shell upon which are supported any number of burners. I have preferred to show four which are supplied with gas or hydrocarbon vapor by the pipes 1. However, my invention can be applied to one or any number of burners.

E, is a battery in circuit with the wire 2 which is coiled at 3 to form a primary coil of an induction coil. The circuit 2 is interrupted by the push button switch 4 which is ordinarily open.

5 is the secondary coil of the induction coil. The wire 6 leads from this coil to the burner B where it connects with the spark plug of this burner (which is not shown in detail but whose detail construction will appear from the hereinafter described burners B² and B³). Thence the circuit is traced

through the wire 8 in the sheath 9 to the burner B¹ whose spark plug, like all the other plugs, is in series with this circuit. The circuit then leads by the wire 11 in the sheath 12 to the burner B² where the electrical connections are shown as in Fig. 2. The wire 11 enters the side of the plug and passes up a central boring in the insulating body 14 of the plug, which may be porcelain or other non-conducting material. This body is cylindrical with a reduced cylindrical portion or neck 15 at the top. The bottom of the body is recessed to fit over the rod 16 for supporting the burners and it is connected thereto by the cap plate 17 and screws 18. The cap of the plug consists of a hood 19 which is circular in cross section and part-spherical in elevation. This is supported in upright position from a sleeve 20 by the posts 21, while the sleeve 20 is adapted to slip over the neck 15 of the insulating body. The electrode *e* on the wire projects through the top of the reduced cylinder 15 and may be a continuation of the wire 11. This electrode *e* also passes through the cap 20, but is insulated from it. The electrode *e*¹ is fitted through the center of the hood 19 so as to be in alinement with the electrode *e*, but spaced therefrom to form a gap. The above construction allows the removal of the cap at any time to clean off carbon deposits or for locating other troubles.

The wire 23 leads from the metallic sleeve down through the side of the insulating block 14, from thence through the laterally projecting nipple 24 over which fits the sheath 25 to the spark plug of the adjoining burner B³, thence up through the insulating body of the plug to an electrode *e* similar to an electrode *e* in the plug used with burner B². An electrode *e*¹ is opposite the lower electrode *e* and leads through the hood 19 of this burner to the wire 27 that travels downward through the insulating body 14 of this burner to the nipple 24^a onto which fits the binding post 28. A return wire 30 leads back to the secondary coil 5.

In the form shown in Fig. 4, the spark plug S is located between two of the radially extending arms of the burner which is of that type which has no central aperture. Wires from the battery 1 lead through the coil 3 to the terminal plates 31 and 32 which are spaced by insulating material that is held on an arm 33 that is fastened from the

supply pipe 34 of the burner. The valve handle 35 has a metallic shank and may be swung around to the position shown in the dotted lines so that it establishes a connection between the terminals 31 and 32, establishing, thereby, a circuit through the battery and coil. It is thus readily seen that by pushing the button 4 or turning the valve handle 35 so that it strikes the terminals 31 and 32 that a circuit is established through the battery primary winding of the coil and this causes a current of much higher electromotive force through the secondary circuit by reason of the greater number of coils.

In the form of my invention shown in Fig. 1, the spark occurs in all the burners simultaneously and only ignites that or those burners into which the gas or hydrocarbon-vapor has been turned. In the modification shown in Fig. 3, the leading-in wire goes up through the center of the insulating body 14 and continues directly up into the hood 19^b which is made detachable by using the screws 40 that screw into the posts 21. In this form the hood 19^b almost fills out the central aperture of the burner so that its edges are very close to the burner. The burner is connected with the secondary circuit so that the whole burner is in circuit and the arcing is from the edges of the hood to the burner ring 37.

In the form of this invention shown in Fig. 2, the hood 19 extends considerably beyond the other parts of the spark plug, so as to protect the spark plug from water or other liquids that may boil over or spill upon the burner, and the posts 21 form a chamber below this cover piece through which the gases or vapors have ready access so as to come in contact with the spark and readily ignite. By unscrewing the screws 18 and taking off the cap plate 17, then slipping the nipples 24 out of the sheaths the plugs may be detached.

I am aware that electric igniters have been patented, but I believe I am the first in this art to employ a device that furnishes a continuous spark that is operated by closing a switch and that I am the first to

employ a spark plug in this relation and the first to use a plug having the functions and usages above set forth.

What I claim is:—

1. In combination with a gas stove, a spark plug comprising an insulating body provided with a neck, a cap consisting of a sleeve slidable over the neck, a hood, posts supporting the hood on the sleeve and electrodes projecting into the chamber inclosed by the hood and posts, substantially as described.

2. An igniter for gas and vapor stoves, having in combination with a burner; a supporting rod therefor; a spark plug comprising an insulating body having a recess to fit on said supporting rod, a neck and a nipple; a sheath adapted to fit over the nipple and carry the electrical connections; and a cap removably slidable over said neck, substantially as described.

3. An igniter for gas and vapor stoves, having in combination with a burner, a spark plug provided with a hood and electrodes protected by said hood, substantially as described.

4. An igniter system for gas and vapor stoves, having in combination with a plurality of burners, a plurality of spark plugs provided with nipples, electrical connections between the spark plugs and a sheath for containing the electrical connections and adapted to fit onto said nipples, substantially as described.

5. An igniter for gas and vapor stoves, having in combination with a ring burner, a spark plug projecting up through the central aperture thereof and comprising an insulated body portion, a cap fitting over the top of said insulated body portion, a hood superimposed on the top of the cap and electrical connections through the insulated body portion, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

LOUIS V. RAULET.

Witnesses:

STUART C. BARNES,
VIRGINIA C. SPRATT.